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CLASSIFICATION OF FIRE RESISTANCE
FIRES-CR-267-22-AUPE

L-shaped combination fire-resistant door DWF

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CLASSIFICATION OF FIRE RESISTANCE IN ACCORDANCE WITH EN 13501-2: 2016

with direct field of application

FIRES-CR-267-22-AUPE

Name of the product: L-shaped combination fire-resistant door DWF

Sponsor:
FAKRO SP z o.o.
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1. INTRODUCTION

This classification report defines the resistance to fire classification assigned to element, L-shaped combination fire-resistant door DWF, in accordance with the procedures given in EN 13501-2: 2016.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, L-shaped combination fire-resistant door DWF, is defined as:

Product Technical Specifications: STN EN 16034: 2015; STN EN 14351-2

Product family: hatches intended for the installation in areas in the reach of persons and for which the main intended uses are giving safe access for persons

Mode of operation: manually operated; normally maintained locked in the closed position

Intended use: fire compartmentation
End-use application: for fire compartmentation uses

2.2 PRODUCT DESCRIPTION

The product is L-shaped combination fire-resistant door DWF.

Dimensions

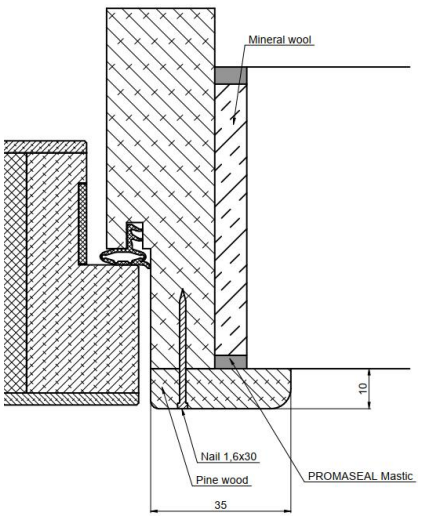
Overall dimensions of the product	(684 x 1084) (width x height)
Overall dimensions of the door leaf	(646 x 1046 x 66) mm (width x height x thickness)
Clear opening	(630 x 1030) mm (width x height)

Door frame

Door frame is made from a pine-wood profile with dimensions of (27 x 90) mm and average bulk density of 520 kg/m^3.

Dimensions of the door frame rebate are of (11 x 30) mm (width x depth); within the rebate width a groove with dimensions of (4 x 6,5) mm (width x depth) for a seal is milled.

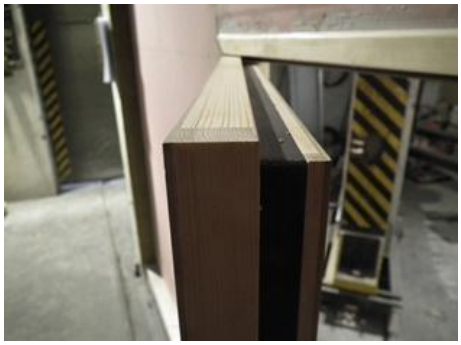
On the hinge side the door frame is covered with pine-wood listels with cross section dimensions of (35 x 10) mm (width x depth); the listels are fixed using nails of (1,6 x 30) mm.



Door leaf

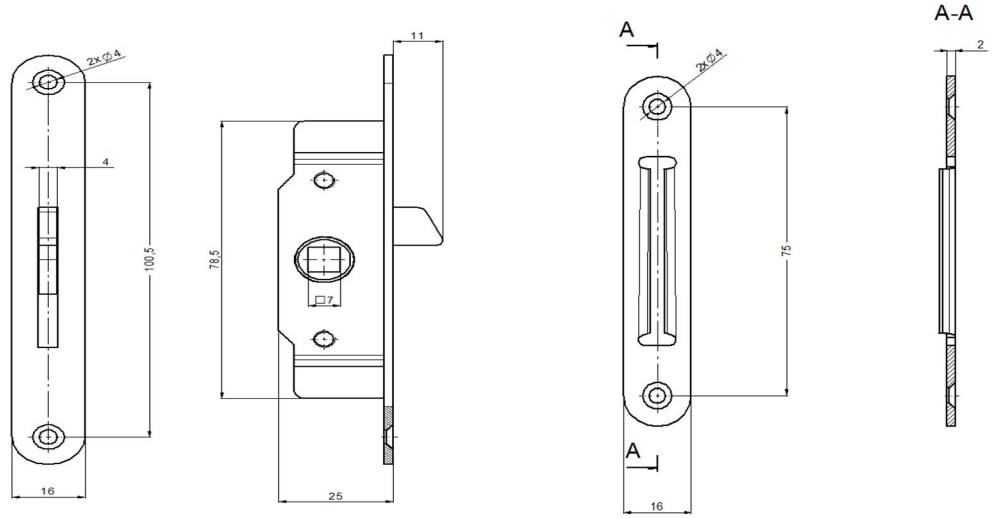
- leaf frame – made of pine-wood profiles of average bulk density of 520 kg/m^3; cross section dimensions are: (28 x 60) mm; the leaf frame rebate dimensions are of (13 x 31) mm (width x depth); within the rebate width a groove with dimensions of (20 x 2) mm (width x depth) for an intumescent tape is milled;
- core – consists of mineral wool Rockwool ROCKLIT 150, 60 mm thick, with bulk density of 150 kg/m^3;
- facing – HDF board 3 mm thick (manufacturer: Kronospan), glued to both sides of the leaf frame and the core using JOWACOLL 103.15 glue (manufacturer: JOWAT AG, Germany).

Intumescent tapes
Intumescent tapes, PROMASEAL PL (manufacturer: PROMAT) with dimensions (20 x 2) mm, placed around the perimeter of the leaf in the groove within the leaf frame rebate.

Seal
Stop seal of SJ521 type (manufacturer: AiB Sp z o.o., Poland), placed in the milled groove within the door frame rebate.

Lock
Wide window lock (manufacturer: F.P.H. MET-PLAST, Poland). Closing point of lock is placed in the height of 520 mm from the bottom edge of the door leaf.

Building hardware
Wide window handle (manufacturer: WISBERG" Sp. z o.o., Poland).

Hinges
2 pieces of integrated hinges of OTLAV CI 300 130 H0 03 type (manufacturer: Otlav).
Hinges are positioned as follows: centre of the bottom and upper hinges is placed in the distance of 80 mm from the bottom and upper edges of the door leaf.

Fixation of the product
The product is fixed to a flexible supporting construction in accordance with EN 1363-1: 2012, Group A for the intended fire resistance EI 30 (steel CW 55 profiles, covered with one layer of gypsum boards of type F 12,5 mm thick, on each wall face, insulated with mineral wool board 50 mm thick, with bulk density of 60 kg.m^{-2}) using steel screws of (Ø 5 x 60) mm. Two screws are placed on vertical sides in distance of 150 mm from the edges of frame and one screw is placed on horizontal side in the middle of the frame width. The gap between door frame and supporting construction is filled with strips of mineral wool, 8 mm thick, and sealed at both sides with PROMASEAL® mastic.

More detailed information about product construction is shown in the test repot [1] according to cl. 3.1 of this document.

3. TEST REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS

No.	Name of laboratory	Name of sponsor	Test report No.	Date of the test	Test method	Type of the test
[1]	FIRES, s.r.o., Batizovce, SK	FAKRO SP z o.o., Nowy Sącz, PL	FIRES-FR-192-13-AUNE	08. 11. 2013	STN EN 1634-1: 2008	A

Type of the test: A – accredited, N – non-accredited

[1] Test specimens were conditioned according to EN 1363-1 before the fire resistance test

Note: The test conditions and the unexposed thermocouples arrangement, relating to the classified product, defined in the STN EN 1634-1: 2008 were the same as defined in STN EN 1634-1+A1: 2018.

3.2 TEST RESULTS

No./ Test method	Parameter		Results
[1] EN 1634-1	applied load		-
	supporting construction		standard flexible supporting construction, made of steel CW 55 profiles, covered with one layer of gypsum boards of type F 12,5 mm thick on each wall face, insulated with mineral wool board 50 mm thick, with bulk density of 60 kg.m^{-2}
	temperature curve		standard temperature time curve
	loadbearing capacity		
	integrity	cotton pad	47 minutes
		gap gauges	47 minutes no failure
		sustained flaming	47 minutes
	thermal insulation	I_1	47 minutes
		I_2	47 minutes
	radiation		47 minutes*
	mechanical action		-
	operability		passed (25 cycles)
	self-closing		-
	test specimen / orientation		DWF door / opening towards the test furnace

* Measurement of radiation was not carried out during the test as the average temperature on the specimen surface did not exceed 300 °C; according to EN 1363-2 measurement of radiation is not required in this case.

[1] The test was discontinued in 49th minute because of integrity failure

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with clause 7.5.5 of EN 13501-2: 2016.

4.2 CLASSIFICATION

The element, L-shaped combination fire-resistant door DWF, is classified according to the following combinations of performance parameters and classes as appropriate.

Orientation	Fire resistance classification
Hinges on exposed side	**E 45; EI_1 45; EI_2 45; EW 30***

* Standard EN 13501-2: 2016, clause 7.5.5 does not define class EW 45, but classified product satisfies integrity (E) and heat radiation (W) performance criterion for classification time 45 minutes.

4.3 FIELD OF APPLICATION

This classification is valid according to EN 1634-1:2014+A1:2018 for the following end use applications:

Materials and construction	- the materials and construction of the door shall be the same as tested; - the number of leaves and the mode of operation shall not be changed; - for timber-based board products, the composition shall not change from that tested; the density shall not be reduced but may be increased; - the cross-sectional dimensions and/or the density of the timber frames (including rebates) shall not be reduced but may be increased; - the number, size, location and orientation of any joints in the timber framing shall not be changed;
Decorative finishes	- alternative paints (without a contribution to the fire resistance) are acceptable and may be added to leaves or frames; - decorative laminates and timber veneers up to 1,5 mm thickness may be added to the faces (not to the edges) of leaf and frame;
Fixings	- the number of fixings used to attach the door to supporting constructions may be increased but shall not be decreased and the distance between fixings may be reduced but shall not be increased;
Building hardware	- the number of hinges may be increased but shall not be decreased;

Permissible size variations (width x height)	- unlimited size reduction is permitted;
	- for smaller doorset sizes the relative positioning of movement restrictors (e.g. hinges, latch etc.) shall remain the same as tested or any change to the distances between them will be limited to the same percentage reduction as the decrease of size;
	- product dimensions increase is permitted up to 15 % in height, 15 % in width but max. of 20 % in area under the condition that the classification changes to
	E 30-C0 / EI_1 30-C0 / EI_2 30-C0 / EW 30-C0;
	- for larger door sizes the following shall also apply:
	  - the height of the latch above floor level shall be equal to or greater than the tested height, and such increase in height shall be at least proportional to the increase in door height;
	  - the distance of the top hinge from the top of door shall be equal to or less than that tested;
	  - the distance of the bottom hinge from bottom of door shall be equal to or less than that tested;
	Note: The height of the door frame head above the floor level shall not increase against that tested.

Supporting construction	- product may be mounted using the same manner as described in cl. 2.2 of this document into a flexible supporting construction of the board covered type with studs from metal or timber, with fire resistance equal to or greater than that in which the door was tested (the fire resistance of supporting construction shall be established separately in a previous test); - product may be mounted in a rigid supporting construction with fire resistance equal to or greater than that in which the door was tested provided the fixing method is appropriate to this construction.

5. LIMITATIONS

This classification document does not represent type approval or certification of the product.

The classification is valid provided that the product, field of application and standards and regulations are not changed.

Approved by:

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